

Table 4-1
Field Data and Observations During Surface Water Sampling at Waimanalo Stream

Bellows OU1 EE/CA, Bellows AFS, Hawaii

Location	Date	Time	Tidal Dept	Stag	Station Conditions	Habitat Description	Dissolve					Comments	
							pH	Temperature (°C)	d Oxygen (mg/l)	Salinity (ppt)	Turbidity (NTU)		Conductance (mS/cm)
Upstream Locations													
WSU-00	11/11/1998	1230	1	E	Debris - overgrowing vegetation from bank, almost completely covered; Channel - small side	Bank - tall grasses and reeds, cover channel leaving small open water spots; Stream - substrate	7.92	25.8	5.6	0.1	6	0.321	Side channel almost completely overgrown.
WSU-00	11/11/1998	1130	1.3	E	Debris - canal almost completely overgrown by vegetation; grasses, reeds, also some aquatic vegetation; Clarity ~ 1.5', no other debris; Aroma - no apparent aroma; Color -	Bank - tall grasses and reeds, some shrubs and ground cover; Stream - mud bottom.	7.11	24.7	2.03	0.1	2	0.406	Fish present may be Tilapia; sampling done slightly upstream of confluence.
Downstream Locations													
WS-001	11/10/1998	1000	1.5	E	Debris - 1 2' large plastic bag floating, leaves floating/subsurface, pollen seed pods/loose vegetation; Aroma - no apparent; Color - brownish;	Bank vegetation - grass, brush and ground cover, steep 2' vertical wall; Stream - mixture of rock (12" minus) and mud, appears to be mud towards	7.49	25.2	3.63	5.6	1	10	Tilapia observed at this site.
WS-002	11/10/1998	800	1.6	F	Area next to bank stabilization area (concrete?); some floating debris (leaves); no notable odor; brownish color, good clarity ~3'.	Bank grass/shrub upstream from bridge; bottom mixed; rock near edge; mud bottom.	7.32	24.9	3.57	10.9	1	18.3	
WS-003	11/10/1998	1230	0.6	E	Debris - pollen, seed pods/loose vegetation (long thin); Aroma - no apparent odor; Color - brown; Clarity - 2.5'.	Banks - shrub, grasses, ground cover; Stream - mud, 1 or 2 large (12" rocks).	7.79	25.7	4.22	11.2	1	18.9	
WS-004	11/11/1998	800	1.4	F	Debris - 1 plastic trash bag on bank at site, leaves present on bank and in water (small quantity), seed pods/subsurface vegetation, 12" long 3/8" diameter (two large roots are end in sediment below water-cigar shape); Aroma - slight saltwater smell, H ₂ S (rotten egg plus odor) occasionally present; Color - tannish; Clarity - 1.5' to bottom.	Stream - seed pod/ subsurface vegetation (5%) only present with 10' of bank, (1) 3-ft boulder at bank with smaller cobbles and gravel within first 5' of waters edge, small quantity of leaves/other or organic matter in stream; Bank - Edge of roadway, small iron wood trees (conifer) 15 to 20 ft, small bushes (mangroves), some trace ground cover and grass.	7.48	23.8	6.3	6.7	1	11.7	Color - color change at Sta. WS04&05 is tan due to coral beach sand reach up into stream mouth +/- 100' beyond #04, color turns brown as sediment begins to dominate bottom of stream. Local security guard indicated that Bellows AFS may periodically dredge

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Location	Date	Time	Tidal Stage	Station Conditions	Habitat Description	Dissolved						Comments
						pH	Temperature (°C)	Dissolved Oxygen (mg/l)	Salinity (ppt)	Turbidity (NTU)	Conductance (mS/cm)	
WS-005	11/11/1998	930	1.5 S	Debris - seed pod/subsurface vegetation (mangrove?), pine needles, leaves, most seed pods at or above high tide, pollen at surface edge; Aroma: slight saltwater smell and occasional H ₂ S rotten odor drift by; Color: tan - see WS-004 comments for	Bank - high tide/flood surge zone with carcarous sand and nothing growing, mangrove trees just beyond sand (10-40' to treeline), trace grasses; Stream - carcarous sand 1.0 ft deep, system extends from bridge to +/- 300 upstream of bridge and all	7.63	25	3.92	9.1	2	15.5	Fish - Tilapia, young fish (young of the year). Tilapia and mullet observed at this location.

Notes:

F = flood tide
 S - slack tide

E = ebb tide
 kts = knots

°C = degrees Celsius
 mg/L = milligrams per liter

NTU = Nephelometric Turbidity Units ppt = parts per thousand
 mS/cm = milliSiemens per centimeter